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IS 147 (1950): ready mixed paint, slushing, petrol resisting, stoving, for interior painting of tanks and containers, red oxide [CHD 20: Paints, Varnishes and Related Products]



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Indian Standard

SPECIFICATION FOR READY MIXED PAINT, SLUSHING, PETROL RESISTING, STOVING FOR INTERIOR PAINTING OF TANKS AND CONTAINERS, RED OXIDE (COLOUR UNSPECIFIED)

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AMENDMENT NO. 2 OCTOBER 1988
TO
IS : 147 - 1950 SPECIFICATION FOR READY
MIXED PAINT, SLUSHING, PETROL RESISTING,
STOVING FOR INTERIOR PAINTING OF TANKS
AND CONTAINERS, RED OXIDE (COLOUR
UNSPECIFIED)

(Page 2, clause 4.1.1) — Delete.

(CDC 8)

Indian Standard

SPECIFICATION FOR READY MIXED PAINT, SLUSHING, PETROL RESISTING, STOVING, FOR INTERIOR PAINTING OF TANKS AND CONTAINERS, RED OXIDE (COLOUR UNSPECIFIED)

FOREWORD

THIS Indian Standard was adopted by the Indian Standards Institution on 7 September 1950 on the endorsement by the Chemical Division Council of the draft finalized on 8 June 1950 by the Paints and Allied Products Sectional Committee. It is based largely on the *interim* co-ordinated draft produced with the assistance of the representatives of manufacturers and of various departments and authorities of the Government of India, by the Co-ordinating Subcommittee of the No. 5 Standing Committee on Specifications for Paints and Allied Stores of the General Head-

quarters, India (now Army Headquarters), Master General of the Ordnance Branch, which was set up in 1942 and continued to function till 1947. In drafting this standard, British standards and the standards of the American Society for Testing Materials on the subject have been drawn upon freely, and the assistance so derived is acknowledged.

The Indian Standard Methods of Test for Ready Mixed Paints and Enamels (IS : 101-1950) is a necessary adjunct to this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of test for the material commercially known as Ready Mixed Paint, Slushing, Petrol Resisting, Stoving, for Interior Painting of Tanks and Containers, Red Oxide (colour unspecified). The material is used for the interior protection of small petrol tanks and containers and is such that on stoving it gives a film which is petrol resisting and does not increase "gumming" of petrol.

1.2 This standard is intended chiefly to cover the technical provisions relating to the purchase of the material, but it does not include all the necessary provisions of a contract.

2. TERMINOLOGY

2.1 For the purposes of this standard, the definitions given under 2 of IS : 101-1950 shall apply.

3. SAMPLE

3.1 The vendor shall submit a tender sample packed in three different containers, each containing not less than 500 g of the material.

3.2 The purchaser may select, as approved sample, the sample submitted by the vendor, or any other agreed sample. He shall return to the vendor one suitably sealed container of the approved sample.

3.3 Representative samples of the material shall be drawn as prescribed under 3 of IS : 101-1950.

4. REQUIREMENTS

4.1 Composition — The material shall be of such a composition as to satisfy the requirements of this standard.

4.1.1 Gypsum and calcium sulphate shall not be used.

4.2 Freedom from Copper — The material shall be free from copper and compounds of copper.

4.3 Resistance to Fuel for Aeroengines and Effect on Fuel

4.3.1 When the test drum treated with the material is tested as described in Appendix A, the paint film shall show no surface defects.

4.3.2 The fuel for aeroengines, stored as described in Appendix A and tested as described in

Appendix B, shall not show an increase in existent gum by more than 10 mg per 100 ml of fuel.

4.4 The material shall also conform to the requirements in Table I.

5. TESTS

5.1 Unless specified otherwise, tests shall be conducted as prescribed in IS : 101-1950. References to the relevant clauses of that standard are given in column (4) in Table I.

5.2 The tests marked with an asterisk shall be carried out on stoved films after keeping for 24 hours at room temperature.

5.2.1 Unless otherwise agreed between the purchaser and the vendor, the stoving temperature and time shall be 150°C and 30 minutes for dark colours, and 93°C and 1 hour for pale and light colours.

TABLE I REQUIREMENTS FOR READY MIXED PAINT, SLUSHING, PETROL RESISTING, STOVING, FOR INTERIOR PAINTING OF TANKS AND CONTAINERS, RED OXIDE (COLOUR UNSPECIFIED)

(Clause 4.4)

SERIAL NUMBER	CHARACTERISTIC	REQUIREMENT	REFERENCE TO IS:101-1950
(1)	(2)	(3)	(4)
i)	Consistency	Smooth and uniform	7.4
ii)	*Drying time : Hard dry	Dark colours stoved at 150°C, not more than $\frac{1}{2}$ hour; light and pale colours stoved at 93°C, not more than 1 hour	2.1.9, 7.1, 7.2 & 7.3.2

TABLE I REQUIREMENTS FOR READY MIXED PAINT, SLUSHING, PETROL RESISTING, STOVING, FOR INTERIOR PAINTING OF TANKS AND CONTAINERS, RED OXIDE (COLOUR UNSPECIFIED) — Contd

(Clause 4.4)

SERIAL NUMBER	CHARACTERISTIC	REQUIREMENT	REFERENCE TO IS:101-1950
(1)	(2)	(3)	(4)
iii)	*Finish	Smooth	7.5
iv)	Covering power	Not less than 90 percent of the approved sample	2.1.11 & 8
v)	Opacity	Not less than 90 percent of the approved sample	2.1.13 & 10
vi)	Colour	Close match to the approved sample	11
vii)	Residue on sieve	Not more than 0.3 percent	13
viii)	*Scratch hardness	No such scratch as to show the bare metal	15.1
ix)	*Flexibility and adhesion	No visible damage or detachment of film	16
x)	Protection against corrosion	No signs of break-down or corrosion	18
xi)	Weight in kg/10 litres	Within 3 percent of the approved sample	2.1.14 & 25
xii)	Keeping properties	Not less than one year from the date of manufacture	31
xiii)	Marking and delivery	As agreed with the purchaser	32

* These tests shall be carried out on stoved films after keeping for 24 hours at room temperature.

APPENDIX A

(Clause 4.3.1)

DETERMINATION OF RESISTANCE TO AEROENGINE FUEL AND EFFECT ON FUEL

1. PREPARATION OF THE CONTAINER

1.1 Flush with the paint a cylindrical, pickled, cold-rolled, close annealed, mild steel plate container, 2.5 in. (or 60 mm) diameter and 3 in. (or 75 mm) high, provided with a well fitting lid and allow the excess to drain off. Allow the container to dry for a period of seven days at room temperature.

2. PROCEDURE

2.1 Store 200 ml of fuel for aeroengines in the container and keep the container at room temperature. After one month, examine the paint film for blistering, cracking or any other surface defect.

2.1.1 Reserve the aeroengine fuel for test as described in Appendix B.

APPENDIX B

(Clause 4.3.2)

DETERMINATION OF THE EXISTENT GUM

1. APPARATUS

1.1 The following apparatus is required :

- a) *Flask* — round-bottomed, of about 250 ml total capacity with ground joint. Alternatively, a distillation flask may be used,
- b) *Distillation head* — with a ground joint to fit the flask,
- c) *Condenser* — Liebig type, with a bent end which does not hold water when assembled,
- d) *Graduated receiver* — of 100 ml capacity,
- e) *Dishes* — hemispherical in shape, without lip, 66.5 ± 2 mm in external diameter, and 18 ± 3 g in weight.

1.2 The flask, distillation head, condenser, receiver and dishes shall be made entirely of Pyrex or Hysil or Monax or Geraote-20 glass.

2. PROCEDURE

2.1 Measure 100 ml of the aeroengine fuel, stored as described in Appendix A, into the flask and connect it to the distillation head. Place the flask on an asbestos sheet, 150 mm in diameter and having a central hole 40 mm in diameter. Pass the delivery end of the condenser through a two-hole cork inserted in the 100 ml graduated receiver. Provide the cork with another tube through which the gases and uncondensed vapours evolved during the distillation can be led away from any source of ignition. Bring the contents of the flask cautiously to boiling over a boiling water bath or a hot plate or a Bunsen flame, avoiding any sudden evolution of vapour. Distil at the rate of 4 to 5 ml per minute or about two drops per second until 75 ml of distillate are collected in the graduated receiver.

2.1.1 For referee tests a Bunsen flame shall be used.

2.2 Disconnect the flask from the distillation head and pour the contents into one of the dishes which has been heated previously in steam oven, cooled in dust-free atmosphere for 15 to 20 minutes and weighed to an accuracy of ± 0.2 mg on a balance shielded from direct sunlight. Allow the flask to drain into the dish in an inverted vertical position for 15 seconds. Place the dish at once on a vigorously boiling water bath and allow it to remain supported in a hole having a diameter of 64 ± 1 mm and protected from dust, for one and a half hours.

2.2.1 In the case of fuels distilling less than 50 percent at 100°C and less than 95 percent at 145°C , continue the evaporation on the water bath, if necessary, for a longer period than one and a half hours, and until evaporation is complete.

2.3 After evaporating on the water bath transfer the dish to a water or steam oven and allow it to remain at a temperature of $100^{\circ} \pm 2^{\circ}\text{C}$ for one hour. Allow the dish to cool for 15 to 20 minutes in a dust-free atmosphere and weigh to an accuracy of ± 0.2 mg.

2.4 Repeat the test with aeroengine fuel without storing it in the prepared container and treat the result as a blank.

3. CALCULATION

3.1 Express the residue on evaporation as milligrams of residue per 100 ml of the fuel.

3.2 The prescribed limit for increase in existent gum shall be taken as not having been exceeded if the difference in weight, if any, of the residue on evaporation in the test and the blank is not more than 10 mg per 100 ml of the fuel.